REMARKS

This is in full and timely response to the non-final Action of January 18, 1991 (Paper No.). Reexamination and reconsideration are respectfully requested. A Petition to Extend the Time for Response accompanies this submission.

The specification has been reviewed and a number of changes made to prepare this application for final printing. None of these changes constitutes new matter.

A certified copy in support of the claim for priority was submitted on March 7, 1991. Please acknowledge receipt of this document in forthcoming papers since such copy was not on file when receipt was erroneously acknowledged in the pending Action.

The drawings were objected to for failing to show all of the features of claims 1 and 9 (the transmission and clutch) and claim 4 (the engine). Claim 1 has been cancelled in favor of new claim 11, with claims 12 and 13 (like original claims 3 and 5) depending on claim 11. Claim 14 and 15 replace claims 9 and 10 respectively, while claims 16 to 19 are newly-added. By this claim scheme, the objection to the drawings is overcome.

Reconsideration is requested of the objection to the drawings filed on February 27, 1990 (PTO-948). Formal drawings replacing these original informal drawings were submitted on June 6, 1990.

By the newly-presented claims 11 to 19, the rejection of claims 1 to 5, 9 and 10 is overcome.

A flywheel for a power transmission system for transmitting engine torque to a driven unit, according to the present invention, comprises an elastic plate secured to a crankshaft to rotate therewith and a flywheel body secured to the elastic member and having an engageable surface which is engageable with a clutch disc. In the flywheel as claimed in claims 11, 15 and 16, the elastic plate has an axial rigidity in the range of 600 kg/mm to 2200 kg/mm so as to ensure to transmit engine torque to the driven unit, while decreasing noise produced by a bending vibration of the crankshaft. In the flywheel as claimed in claims 14, 18 and 13, the engageable surface has an axial run-out which is equal to or less than 0.1 mm for ensuring a smooth engagement with the clutch disc. Claims 17 and 19 recite these two features non-quantitatively.

The Examiner has rejected claims 1 and 4 under 35 U.S.C. 102(b) as allegedly being anticipated by Japanese Patent Publication No. 57-58542, and claims 1-5, 9 and 10 under 35 U.S.C. 103 as being unpatentable over the '542 publication.

The '542 publication discloses a flywheel comprising an elastic disc 3 secured to a crankshaft 1, and a flywheel body 9 secured to the elastic member. However, the '542 publication fails to disclose or suggest that the elastic disc 3 has an axial

rigidity in the range of 600 kg/mm to 2200 kg/mm. As can be seen from Table 1 of the present application, when the axial rigidity of the elastic plate is less than 600 kg/mm, the axial displacement of the engageable surface of the flywheel body becomes too large so that the failure of the clutch displacement cannot be effectively prevented. On the other hand, as can be seen from Fig. 2 of the disclosure thereof, when the axial rigidity of the elastic plate is less than 2200 kg/mm, the peak frequency of the bending vibration of the elastic plate can be shafted out of the frequency bands in the range of 200 Hz to 500 Hz in which the bending vibration tends to generate undesirable noise. Therefore, it is very important to set the axial rigidity of the elastic plate in the range of 600 kg/mm to 2200 kg/mm, in order to ensure to transmit engine torque to the driven unit, while decreasing noise produced by a bending vibration of the crankshaft.

In addition, the '542 publication fails to disclose or suggest that the engageable surface has an axial run-out equal to or less than 0.1 mm. As can be seen from Fig. 4 and the disclosure thereof, when the axial run-out is greater than 0.1 mm, the fore and aft vibration of vehicle floor becomes greater than 0.1G in which an uncomfortable feeling is given to a human body. Therefore, it is very important to set the axial run-out

of the engageable surface to be less than 0.1 mm in order to ensure a smooth engagement with the clutch disc so as not to give an uncomfortable feeling to the vehicular occupant.

The aforementioned ranges of the present invention are not disclosed in any one of the references cited, and are not suggested in any combination of the references of record. Therefore, it is believed that claims 11 to 16 and 18 patentably distinguish the invention from the prior art.

Nor does the '542 publication suggest either of the concepts (1) that the elastic plate should have an axial reigidity which is sufficient to transmit torque, while decreasing crankshaft bending vibration noise, as claimed more broadly in claim 17; or (2) that the engageable surface of a flywheel body should have a predetermined axial run-out to ensure smooth engagement with the clutch disc, as claimed more broadly in claim 19. Please contrast the background art discussed in the specification at page 1, line 20 to page 2, line 36; at page 7, line 32 to page 8, line 7 (regarding axial rigidity); and at page 12, lines 11 to 17 (regarding axial run-out) with the described and claimed solutions having advantages as shown in Figs. 2 and 4 for these features respectively.

Reexamination and reconsideration are respectfully requested.

Respectfully submitted,

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